VOLUME I NUMBER 3

BULLETIN

OF

AMERICAN INTERNATIONAL CORPORATION

MAY · 1918

120 BROADWAY · NEW YORK

BULLETIN

OF

American International Corporation

CAPITAL $50,000,000

MAY, 1918

THE American International Corporation, organized by bankers, business men and engineers of the United States, aims

First—To establish friendly commercial relations with all countries of the world;

Second—To participate in the development of such enterprises—domestic or foreign—as will broaden the scope of American activities and lead to a better understanding of international relations;

Third—To promote the organization of corporations or associations to bring together foreign and American bankers, business men and engineers, for the transaction of business and the development of undertakings which will be mutually advantageous.

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CONTENTS

American International Corporation

THE BULLETIN

THE object of the THE BULLETIN is to give an understanding and appreciation of the Corporation's purposes and activities, to keep interest alive and intelligent, and to promote co-operation.

At the time of the formation of the American International Corporation in the fall of 1915, it was anticipated thet the Corporation could perform an important service for this country and the world at large, by undertaking the financing and construction of public utilities in countries where such service was needed, but where neither the financial resources nor the engineering skill were available to make such improvements possible. At thet time our country did not contemplate entering the war and the resources available for foreign investment were large. England, France, Belgium and Germany had for many years prior to the war provided large amounts of capital and furnished the initiative for developments of this kind. The market for foreign securities was established in these countries but American investors as a class did not understand foreign investments and were timid in regard to them.

In pursuance of the purposes for which the Corporation was formed, several important enterprises of this nature in various countries have been investigated, and in some cases the investigations have reached the point where development can be undertaken on a large scale as soon as financial conditions warrant. At present, however, it is felt that the first duty of our organization is to use its financial resources and such skill as it possesses in helping to finance and otherwise assist the many governmental undertakings which the United States' entry into the war has made necessary. But at the same time this Corporation has not lost sight of its primary purpose, and is continuing its preparation for foreign enterprises, in co-operation with our allied countries, when the war comes to a close.

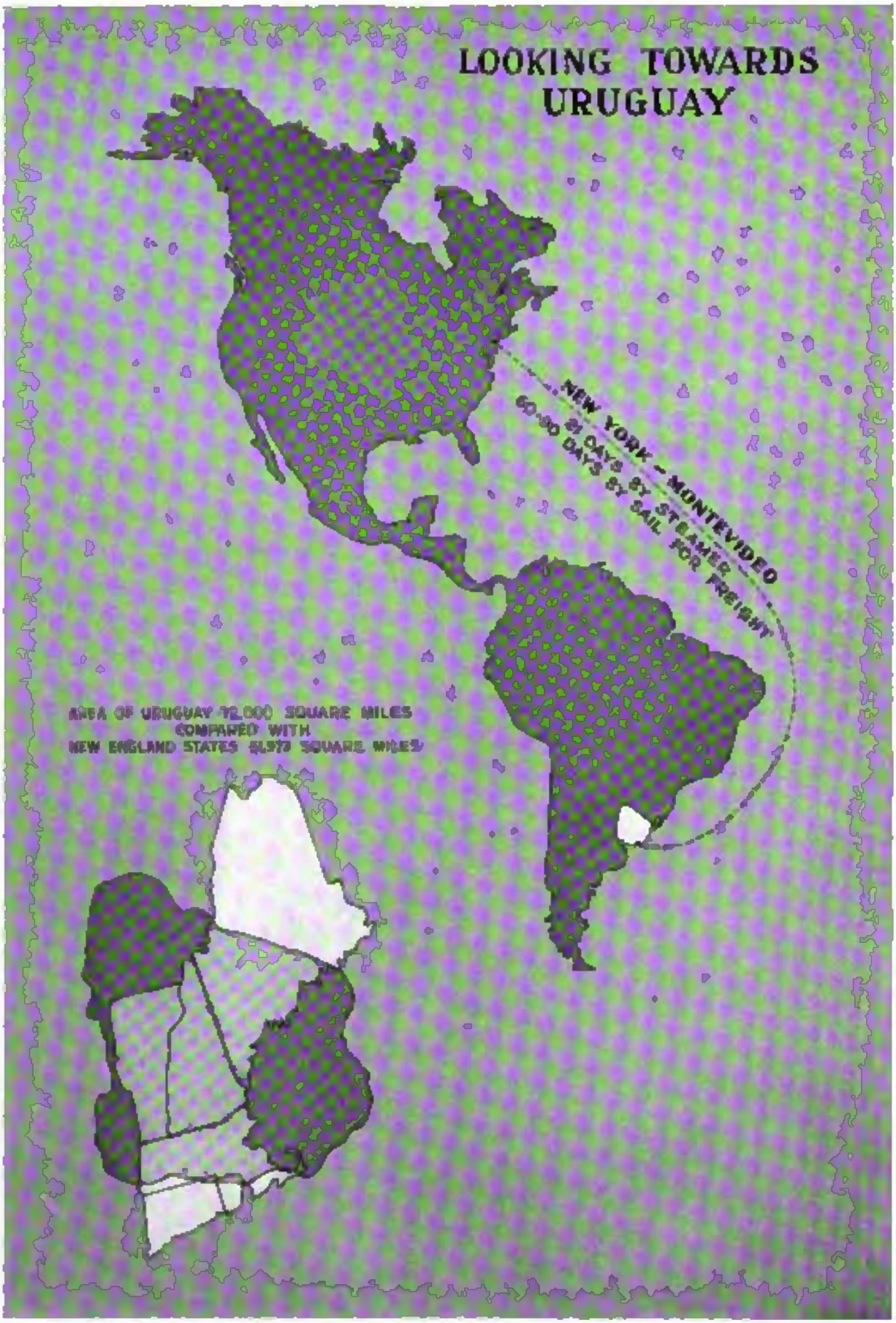
A few of the enterprises undertaken during the year 1916 will be completed. One of them, except for a few minor details, has already been finished, and it is the purpose of this number of the BULLETIN to present to our stockholders, directors and the members of our organization a somewhat detailed account of the construction of water works and sewerage systems for the cities of Mercedes, Paysandu and Salto in Uruguay.

These cities rank next in size and importance to Montevideo the capital of the country. Their sanitary conditions were unsatisfactory and the Uruguayan Government, considering an immediate improvement necessary, proposed a con-

tract involving about $5,000,000, which provided for the purchase of bonds of the Uruguayan Government and secured the services of American engineers and contractors to undertake the work.

American International Corporation, after a careful study of the conditions on the ground by its own experts, entered into a contract to purchase about $4,000,000 of the Uruguayan Government bonds and made arrangements with the Ulen Contracting Company as contractors, and Messrs. Stone & Webster as engineers, to construct and supervise the work and to purchase, each, a portion of the total amount of securities in excess of $4,000,000 required for the completion of the work.

This BULLETIN describes the execution of the work. The most difficult problem encountered was to provide the necessary transportation for supplies which had to be sent from this country. Freight rates to Uruguay rose so rapidly from July, 1916, to July, 1917, that for a time it seemed impossible to transport, at a permissible freight rate, the required amount of piping and other materials. This situation was met by purchasing one sailing vessel and chartering others, making it possible to transport the supplies and complete the contract about a year earlier than contract requirements. It is also worthy of notice that, notwithstanding the increasing cost of materials, sopplies and transportation from the United States, and the rise of exchange on Uruguay affecting the wage-rate, the cost of completion came within the original estimates.


LOOKING TOWARDS
URUGUAY
NEW YORK - MONTEVIDEO
21 DAYS BY STEAMER
60-90 DAYS BY SAIL FOR FREIGHT
AREA OF URUGUAY 72,000 SQUARE MILES
COMPARED WITH
NEW ENGLAND STATES 61,979 SQUARE MILES


THE REPUBLIC
OF
URUGUAY
WITH
PRINCIPAL CITIES
ARGENTINE REPUBLIC
SALTO
PAYSANDU
MERCEDES
MONTEVIDEO
BRAZIL
RIVER
PLATA
ATLANTIC
OCEAN
SALTO, PAYSANDU AND MERCEDES ARE THE NEXT TOWNS IN SIZE AFTER MONTEVIDEO AND WITH THE INSTALLATION OF THE NEW WORKS NOW WILL EQUAL IT IN MODERN SANITATION

Photographs by Courtesy of Pan American Union

WEALTH OF URUGUAY

[1] Wealth is largely in live stock of which there are 35 000 000 Head

[2] Building of the "Association Rural del Uruguay"—the chief Organization for the Promotion of the Natural Wealth of the Country

[3] Calle Rincon, Montevideo

[4] A Wool Packing House. The Wool Production for 1917 was 139,250,000 lbs.

Uruguay

FOR almost one hundred years Uruguay has maintained herself an independent state with republican government, and she has achieved an enviable record for fearlessness and upright dealing. Her location stands to her great commercial advantage for she shares with the Argentine the gateway of one of the greatest systems of inland waterways in the world. The broad estuary of the River Plate, entering wedge-like between the two countries, receives annually a flow greater than the combined rivers of all Europe and draining a territory larger than China.

A vital feature of Uruguay is the Uruguay River which provides deep water transportation and contributes to the commercial importance of the towns on the western border. From the River the country derives its full name, Republica Oriental del Uruguay—the republic east of the Uruguay. It was christened by pioneers who first viewed its attractions from the region lying west and south which is now the Argentine, and not from the north and east as does the latter-day visitor from the United States.

Live stock, raised on the broad, rolling, well-watered plains, which are Uruguay, is the chief source of the country's wealth. On her area, little larger than the New England States, the Republic supports some 35,000,000 head of sheep, cattle, horses and hogs. Cattle inspection and treatment are highly developed under the Department of Industries, Labor and Communications.

Montevideo, with 400,000 people, 20,000,000 tons of shipping annually, and harbor improvements which have cost many millions, is in many respects the queen city, as Buenos Aires is the empire city of the Plate. The seaside resorts of Montevideo, patronized by the citizens of both cities, are famous.

VILLA AT POCITOS BEACH

VIEWS IN SALTO, PAYSANDU AND MERCEDES

Port Improvements at Paysandu

Plaza at Mercedes

London and River Plate Bank at Salto

THE THREE CITIES IMPROVED

With characteristic energy and initiative, Uruguay in order to conserve the good health of her people, has outlined a comprehensive scheme providing all of her centers of population with an abundance of clean water and also with adequate sewage disposal systems. The present description deals with the first great step in realizing this plan, consisting of installation of complete systems in Salto, Paysandu and Mercedes, the three towns standing next to Montevideo in size and importance.

These are thriving places with populations as follows: Paysandu, 22,000; Salto, 20,000; Mercedes, 18,000. Previous to the completion of the present contract they had managed to get along with primitive water supply and inadequate sanitation, aided by their healthful climate and fortunate situations on two great rivers. Salto and Paysandu are on the Uruguay River, a large stream, while Mercedes is on the smaller, though only less important, Rio Negro, so named because of its dusky color leached from the rich soil of the country which it drains.

All three cities owe their importance chiefly to the live stock industry. The Department of Soriano in which Mercedes is situated leads the nineteen departments of the Republic in the latest live stock census with 2,500,000 head. Five of the departments have from 1,800,000 head to 2,400,000 head, and among these five leaders are the Departments of Paysandu and Salto, bearing the same names as their chief cities.

Close to Mercedes on the Uruguay River is Fray Bentos, a center of the Uruguayan packing industry. Here is produced most of the dried meat and beef extract found in the list of exports of the grazing and meat industry which totalled about $70,000,000 in 1915. The weight of grass fed cattle in Uruguay compares favorably with corn fed cattle in the United States.

UNLOADING PIPE IN MONTEVIDEO HARBOR FOR SALTO, PAYSANDU AND MERCEDES

PRIMITIVE WATER SUPPLY

[1] Dipping Water from the Uruguay River
[2] Well at Salto
[3] Old Well With Sweep
[4] An Indian Laundress
[5] Riverside Laundry
[6] Water Cart

MODERN WATER WORKS

[1] The Uruguay, Undefiled Near Salto Intake
[2] Erecting Pumps
[3] Larger of Two Standpipes at Salto
[4] Turning on the Water at Salto
[5] Pumps Installed
[6] Geared Valves on Water Mains

One of the most promising agricultural industries of Uruguay is viticulture and the number of vineyards increased from 10 in 1880 to 934 in 1905 and 1453 in 1915. In this industry the Department of Salto ranks second, Paysandu sixth and Soriano eighth.

Uruguay produces 240 000 tons of wheat and 180,000 tons of maize annually and these crops contribute materially to the business prosperity of Salto, Paysandu and Mercedes. Oranges and tangerines are grown to the value of $1 000 000 a year, and Salto is the center. It is evident that for such towns, attractive and livable in all other respects, modern water works and sewers had become a necessity, and they are now completed. The day of the drawer and carrier of water, driving his mules belly deep into the river and filling his cart with the churnings from hoofs and wheels, is passing, likewise the industry of washing clothes at the river bank, frequently within conversational distance of the driver ladling his daily supply. Out-houses and cess-pools also before long will be things of a bygone day in the three towns.

CATHEDRAL AT SALTO

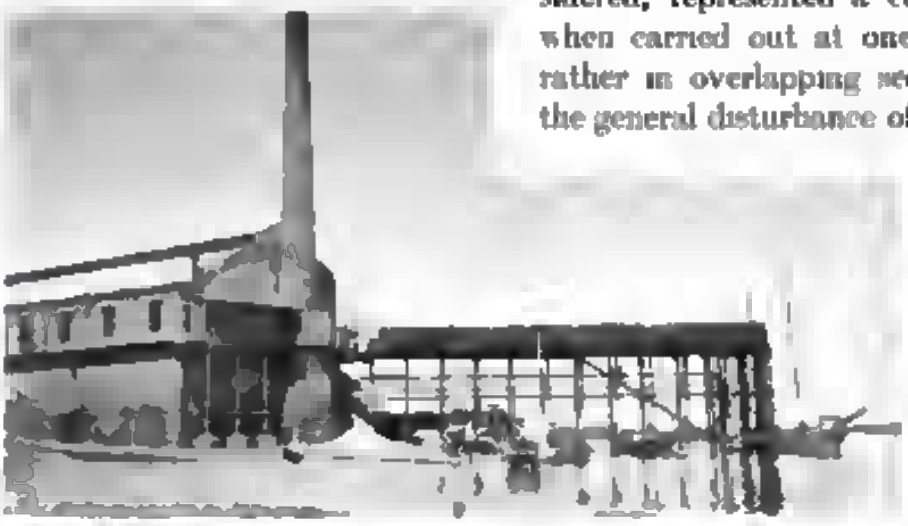
Panorama of Salto from the Cathedral Tower the Uruguay River in the Back ground

Salto Water Works and Seaage Dispoul Systems
(Water Pipe, red, Sewer Pipe, green)

The new water works for Salto and Paysandu consist of a pair of 150 feet-high steel stand-pipes in each town, acting both for storage and pressure regulation, filters to which the water is pumped before going to these stand-pipes, the pumps themselves and finally the distribution systems of cast iron pipe In Mercedes the stand-pipes are replaced by a concrete reservoir on a hill overlooking the town There are fire hydrants on the street mains set flush with the sidewalks and with these are combined taps where people may draw water

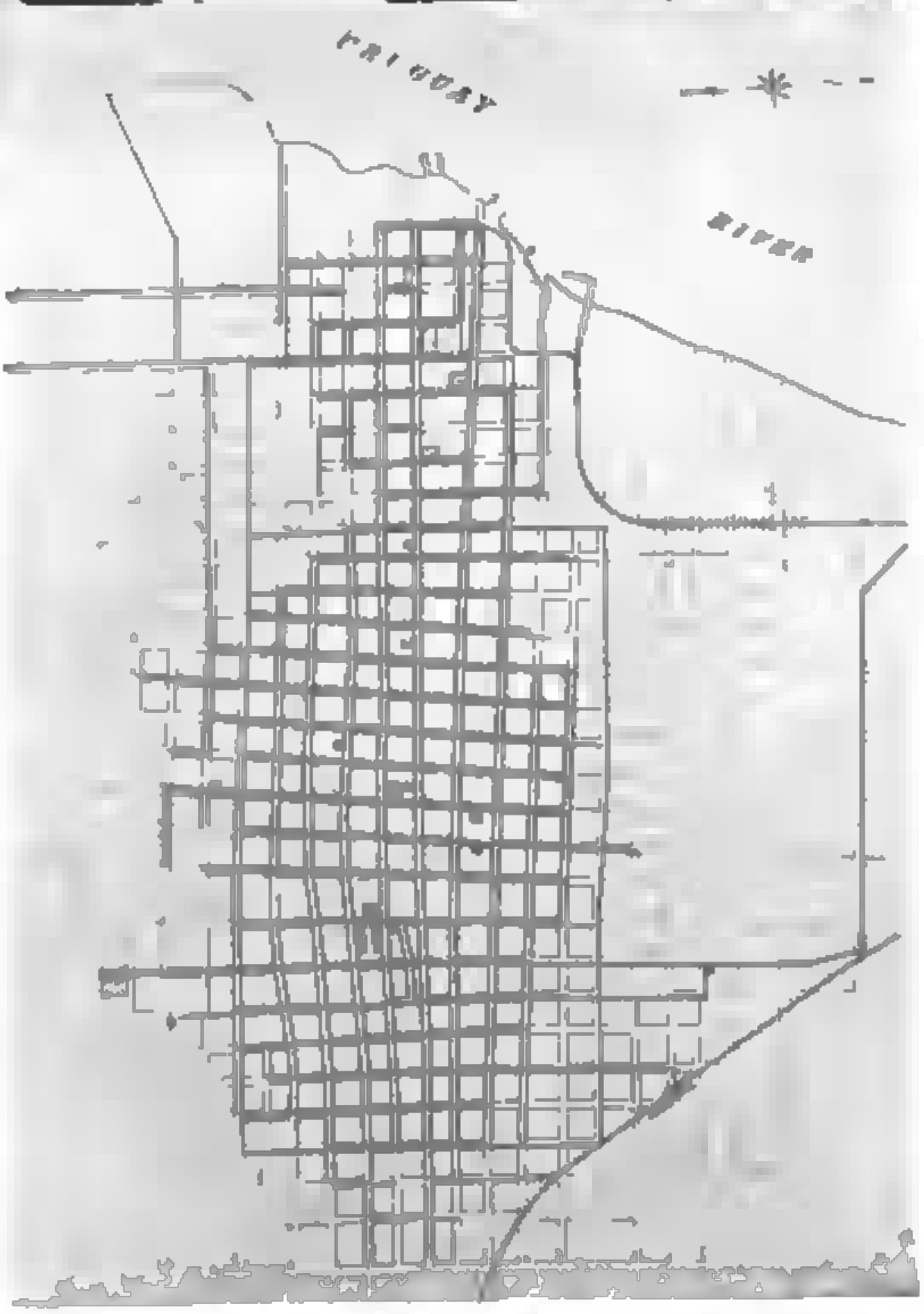
The sewer systems, consisting of concrete mains and pipes, provide for removal of storm water from the streets as well as sewage from the houses As the rainfall is abundant, averaging about 40 inches annually, the disposal of storm water was an important consideration In Mercedes there were storm gutters on some of the main streets, wide and deep enough in places to endanger the life and limb of the unaccustomed stranger, according to a well-known writer

These works, while of no great engineering magnitude separately considered, represented a considerable undertaking when carried out at one and the same time or rather in overlapping sequence and in face of the general disturbance of supply and transportation due to the war Over 100,000 tons of materials entered into the construction and were handled and installed in a period of eighteen months, a year less than the time called for in the contract.



Electric Light Plant at Paysandu Wood Fuel Stacked on Wharf

Panorama of Paysandu looking towards the Uruguay River

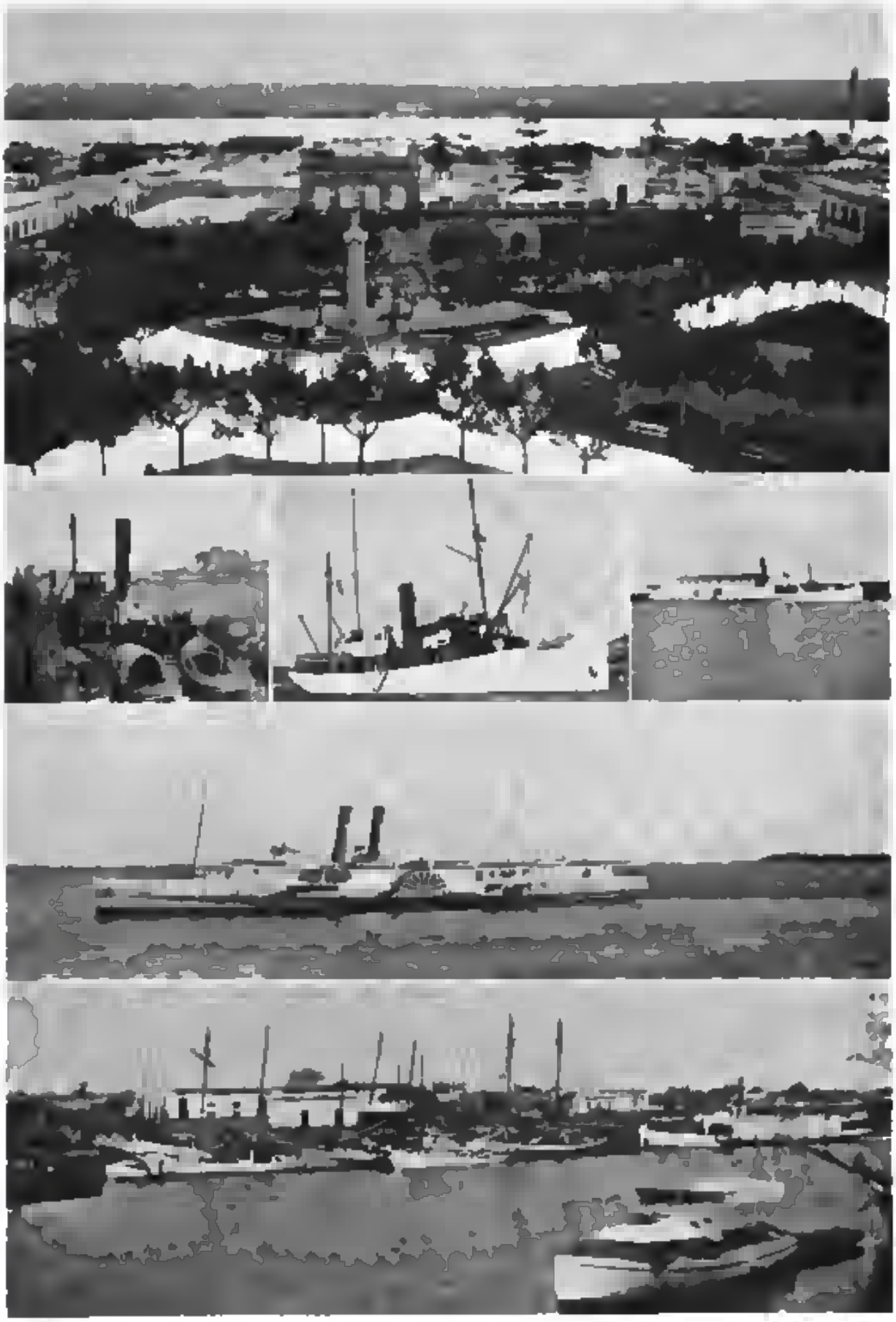


Paysandu Water Works and Sewage Disposal Systems.
(Water Pipe, red Sewer Pipe green)

TOWN OF MERCEDES AND RIVER CRAFT

Mercedes, overlook
ng the Rio Negro

Mercedes Water Works and Sewage Disposal Systems
(Water Pipe red, Sewer Pipe, green)



TOWN OF MERCEDES AND RIVER CRAFT

Mercedes, overlook ing the Rio Negro

Mercedes Water Works and Sewage Disposal Systems.
(Water Pipe, red, Sewer Pipe, green)

THE FLEET THAT WORKED FOR THE JOB

[1] The "Alice M Colburn" in Drydock at Montevideo after encountering storm
[2] Bark "Steinsund" unloading at Montevideo
[3] Schooner "Jerome Jones" in dock at Montevideo
[4] Unloading Pipe from the Hold of the "Steinsund"

Transportation

WHEN the contract was undertaken, the war was already in full swing, ocean freight carriers were in demand as never before, ocean terminals were over-crowded, and the railroads were refusing to accept freight destined for tidewater. This was the prospect with 16,000 tons of material to be shipped to the job from factories in the United States.

A schooner, the "Alice M. Colburn" was bought and arrangements were made for chartering three other ships. Savannah was picked as the port of loading. Railroad shipments were begun, and men were detailed to ride with the freight and use every possible means of keeping it on the move. The men on the job, who had gone ahead by steamer to organize and get ready, eagerly looked for the news of the first large cargo.

The "Colburn" with pipe for Salto left Savannah on the 1st of June, 1916, and dropped anchor in the outer harbor of Montevideo on August 20, after a voyage of 80 days. Three days later, she left salt water for the trip up-river. Low water necessitated unloading at Paysandu, 230 miles from Montevideo, and for the remaining 70 miles to Salto the cargo was put on the railroad, arriving at its final destination about the middle of September, or some four months from the time it left the factory.

The "Colburn" raised sail for the return voyage October 14, speeded by promises to the captain and mate of suits of clothes if they reached Savannah before Christmas. For the return cargo she carried the dried blood of Argentine cattle.

The star voyage of the fleet was the next one which was made by the Norwegian bark "Steinsund." She arrived on December 15, 1916, 57 days out from Savannah with a 4,700-ton cargo which permitted the Salto water works to go ahead without delay. Captain Kildahl was the recipient of congratulations for the quick voyage, which was even more creditable than supposed, as three days had been lost in a storm off the mouth of the Rio de la Plata. The dock authorities at Montevideo granted a special concession by which the cargo was transferred directly to the cars without the usual formality of warehouse inspection.

The next cargo was brought by the "Jerome Jones," a new five-masted schooner from Bath, Maine. She arrived on May 24, 1917 with water pipe for Mercedes. Although arriving at a different season she, like the "Steinsund," ran into a storm off the coast which cost her 11 days and made her total voyage 76 days.

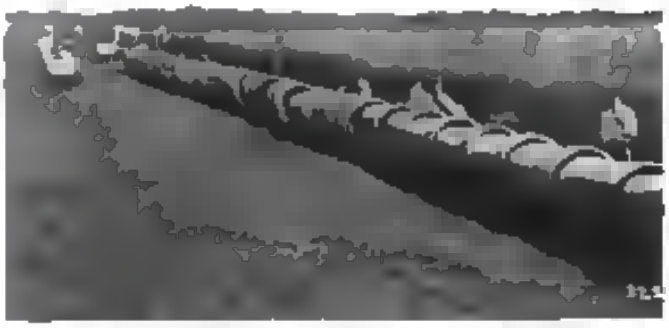
The "Colburn" on her second trip followed the "Jones" in less than a month arriving at Montevideo with pipe and power house machinery for Paysandu on June 20. She encountered the usual storm, but in spite of it she registered 23 days from Savannah, 17 days better than her first voyage and the second best of the fleet. She was severely buffeted by a "pampero," as these storms coming up from the Antarctic are known, in consequence of which she had to go into dry-dock. She loaded a cargo of horn and ground bone and sailed northward July 23. This

was the first "round trip," and as will be seen required a little more than 6 months.

Arrival number five was the 'Edon" with a final cargo for Mercedes and Paysandu, and she was the slow boat of them all, requiring 66 days and making port on August 16. She also carried coal for the government which had to be weighed as it was unloaded, losing further time for the shipment destined for the job.

The distance from Savannah to Montevideo is 7,000 miles by the direct steamer route. The four ships therefore journeyed a total of not less than 84,000 miles on the five voyages made for the job. As sailing vessels they had to reach well out into the Atlantic to get the benefit of favoring winds, and it is probable that they covered an aggregate distance equal to nearly five times around the earth. There is no doubt that the fleet contributed its full share to the completion of the work a year ahead of time.

Construction



THE actual construction work on the contract was officially begun at Salto on July 27, 1910, in the presence of Engineer of Works—Don Pedro B. Magnou — and other government officials and representatives Excavation was opened for the 40 inch main collector of the sewer system, and a section of the concrete was cast to demonstrate to the government that plastering was not needed where steel forms were to be used

Concrete set up in wooden forms, from the Uruguayan opinion of what a finished job should look like, requires plastering, but it was planned by the contractors to use steel forms on the main sewers throughout and when the government saw the class of work turned out on the first test section at Salto they decided that plastering might be dispensed with

Cement of a sufficiently high grade to insure that the government's ideas would be met with was bought for the entire work from a plant in Montevideo. The sand and gravel, also of excellent quality, were dredged from the Uruguay River at Colonia, opposite Buenos Aires, and brought in barges directly to the work The gravel was a variegated agate quartz The total amount of cement used was 13,300 tons.

The supplies and materials bought locally, that is in Uruguay, amounted to about 100,000 tons and those shipped from the United States to 10,000 tons of which 12,000 tons was cast iron water pipe and the remainder principally machinery

The work was not begun at Paysandu and Mercedes simultaneously with that at Salto. The considerable amount of concrete equipment used principally on the sewers was moved from Salto to Paysandu and afterwards to Mercedes. The Paysandu job office was organized in October, 1910, and sewer construction began soon afterwards. The work at Mercedes began less than a month later with the excavation for the reservoir for the water works.

The concrete equipment used successively for the three towns consisted principally of a very interesting cement pipe making plant, the work of which is described later, and of collapsible steel forms with steel rib braces used in the construction of the monolithic trunk sewers of 24 inches, 28 inches and 39 inches diameter, all smaller sizes being laid with cement pipe from the pipe plant.

The economy practiced in having only enough of this extensive sewer making equipment to serve the work in one of the towns at a time brought with it no loss of time on the work as a whole, for final completion in any event would have had to wait on the receipt of the shipments of water pipe and water works machinery from the United States. As it turned out the sewers were ahead of the water works all the way through but this was due as much to efficient handling of the sewer machinery as to tardiness of arrival of water works equipment

The combined length of sewers in the three towns was 89 miles but the great

ADMINISTRATION OF THE WORK

[1] Government Inspection Party
[2] Sr. Pedro B. Magnou, Engineer of Works
[3] Dou Pedro C. Rodrigues,
Secretary to Minister of Public Works
[4] Sr. Alberto F. Canessa, Consulting Engineer
[5] Inspection Party Welcoming the First Cargo of Pipe

SEWAGE DISPOSAL COMPLETED AND IN PROGRESS

Settling Tank at Paysandu
Trench Walls needed no Bracing for Salto Sewers
Main Sewer Outlet at Paysandu from Within
Main Sewer Outlet at Paysandu from Without

Pressure Main and Equalizer between Storage Tanks

preponderance of this mileage was in the smaller sizes made by the pipe plant The proportionate amount of the large monolithic trunk sewers, cast in place, is shown in the reports from Salto where there was laid three miles of monolithic sewer as against 24 miles of cast sewer pipe As shown by the photographs the largest monolithic conduits were not circular in section but were of special section, circular at the upper half and elliptical or oval at the lower half

The sewer machinery moved from Salto to Paysandu January 1, 1917, got through there and was moved to Mercedes in April, and by September 1, one year and one month after breaking ground, the sewers for the three towns were practically completed Probably the most impressive progress made on sewer construction was at Paysandu in the spring of 1917 In two months nearly half the raw materials for sewers, in the shape of sand gravel and cement, were received and turned into the finished product The work went ahead at the rate of $10,000 a day, and of this, the payroll made up less than $3,000 In other words some $7,000 of raw materials was fabricated or transformed into permanent works every day The construction of Paysandu water works had not then opened up so none of the cast iron pipe or water works machinery appear in the above cost It all went into processes of manufacture and installation carried out on the ground

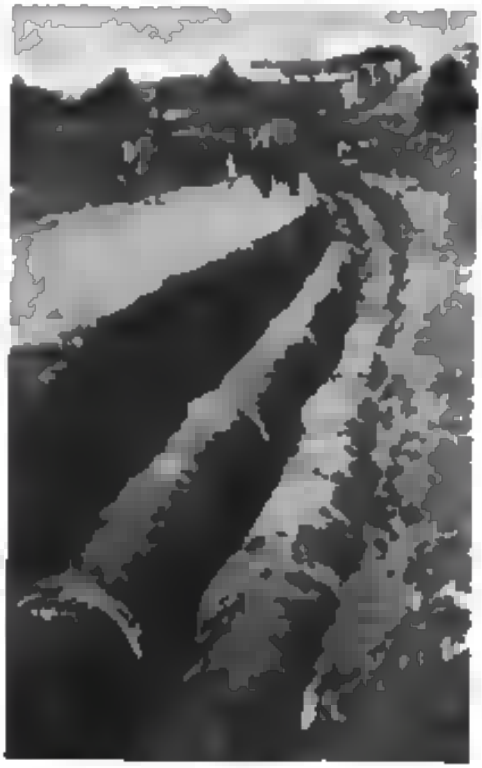
At this time or on March 15 to be exact, the Salto sewers were completed They were two weeks ahead of the 18 months schedule arranged for the water works and sewer construction as a whole and considerably within the estimated cost for their portion.

The combined length of water works for the three towns was 82 miles, closely approximating the length of sewers Instead of a steady rise in the curves of

Salto Power House

water works progress in respective towns, as in the sewer curves, there are a series of steps corresponding with the arrivals of the various cargoes of water works materials The water works curves for Paysandu and Mercedes shoot upwards after the arrival of the "Jerome Jones" in May, 1917, and take another shoot with the second coming of the "Colburn" in June Then they slacken till the arrival and release of the cargo of the "Edna" in the early fall when they take their final ascending slant to the finish of the job

The beginning of the end in the construction of the water works showed up in the October, 1917 report from Salto with the statement that the machinery and distribution system has been successfully tested and the tanks filled The pumps started on September 19, a week less than one year from the laying of the first pipe in 1916



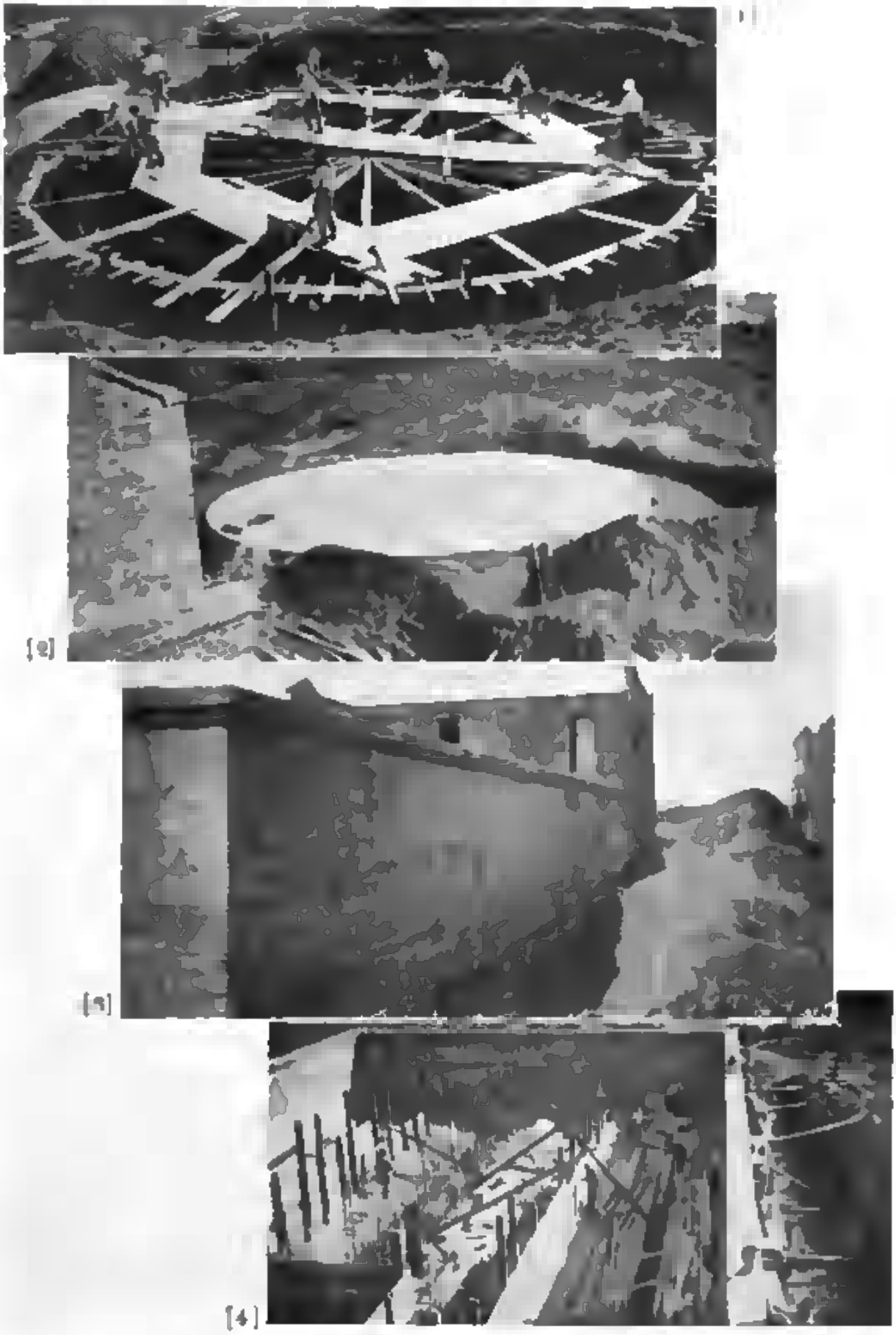
Lead Caulked Pressure Mains

The excavation of 170 miles of trenches for sewer and water pipe was an important part of the work and the success with which it was attended appears in the pages on "Labor" which follow Trenching machines and a steam shovel were used but most of the work seems to have been done by hand labor with rapidity and economy In some places machine excavation at best would have been difficult because of the uncertainty of the ground

The total yardage in 170 miles of trenches, many of them very deep as the photographs show, will be appreciated from the fact that a single mile of 3 feet by 6 feet trench contains 3,520 cubic yards

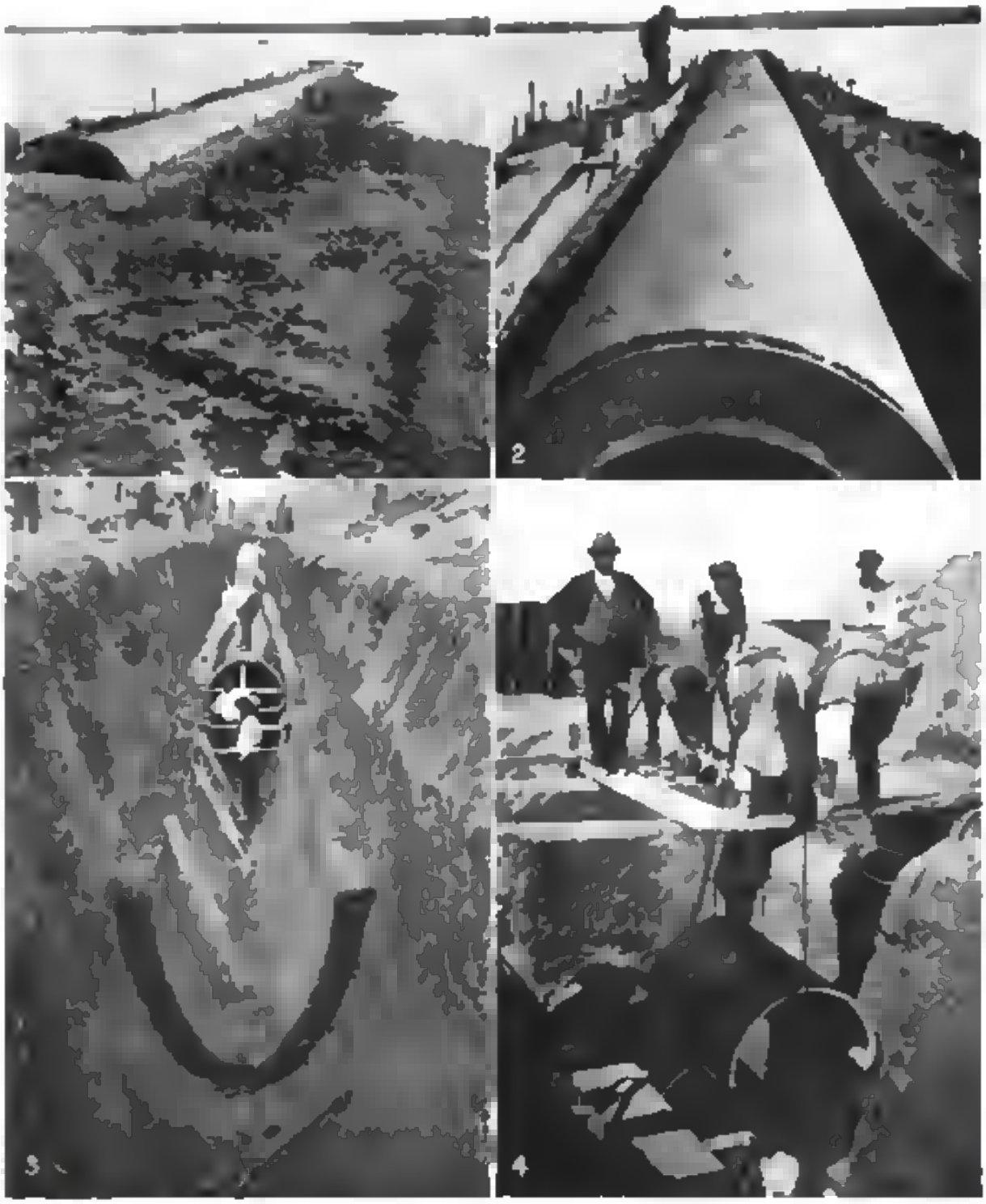
All kinds of material were encountered ranging from solid rock and Tosca to black river muck Rock appeared in unexpected locations, and in some of the deeper trenches the Tosca was penetrated to the underlying country rock of which it was made

Paysandu Power House Nearing Completion



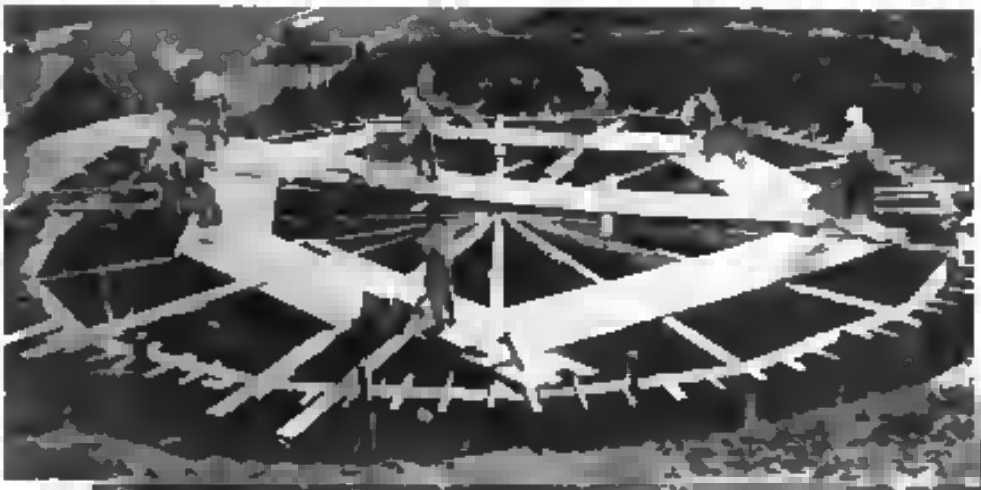
WATER WORKS, COMPLETED AND IN PROGRESS

[1] Constructing Clear Water Reservoir at Salto
[2] Clear Water Reservoir at Salto Completed
[3] Settling Basin at Salto Before Backfilling
[4] Salto Settling Basin Under Construction



SEWER CONSTRUCTION

[1] Mercedes Sewer Outfall
[2] Mercedes Sewer Outfall
[3] Forming Main Sewers in Two Sections
[4] Placing Form for Top Sewer Section



[1]

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[3]

[4]

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SEWER CONSTRUCTION

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CEMENT PIPE MANUFACTURE ON THE JOB

[1] Pipe Storage at Salto
[2] Section of 14' Pipe One Minute Old
[3] Pipe Storage at Paysandu
[4] Machine that Cast 90 Miles of Pipe
[5] Unloading Pipe at Salto

Cement Pipe Manufacture on the Job

"THAT is the remarkable thing about you North Americans You come down here and make a cement pipe in thirty seconds when it used to take us thirty minutes to make the same thing—and now you say that you will finish your contract a year sooner than the time we have allowed you" In these words the Minister of Public Works of Uruguay commended the work of the Ulen Contracting Company on the entire job, taking his text from that part of it that actually played the leading rôle in cutting down time

The above quotation is especially interesting, in view of the fact that when the work started the Government's representatives were somewhat solicitous as to whether the product of the pipe making plant would be sufficiently high grade. A smooth, impervious and strong pipe was demanded, smoothness of surface being much esteemed, an influence, no doubt, of the beautiful architectural effects obtained with skillful plastering in Uruguay

Before the pipe was accepted, it was tested in the Government Laboratories for tightness and for strength against internal pressure The results were most satisfactory None of the pipe was broken at the prescribed pressure of twenty-two pounds per square inch The average strength of those tested to breaking was fifty pounds and the strongest one stood sixty-five pounds, equivalent to a water head of one hundred and fifty feet The pipe was also tested by external mechanical pressure and the eight inch size held up to 2 4 tons It broke into equal fourths showing a remarkable uniform structure. The test for imperviousness consisted in putting on the pressure from a column of water twenty feet high Under this test the surface of the pipe became moist, but there was no collection of water

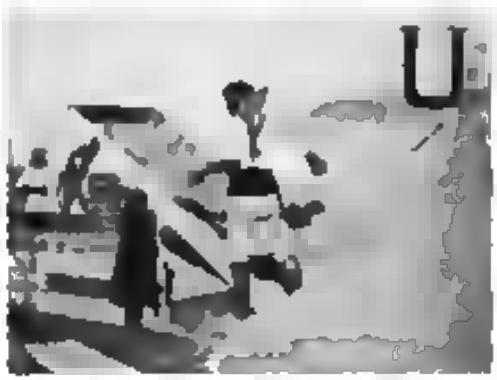
The pipe plant began work at Salto and in the first two months produced half the pipe required for that town It was then operated on double shifts and within six weeks had cleaned up the Salto quota and was ready to be moved to Paysandu Here, beginning January 26th, 1917, it was put on three shifts working the full twenty-four hours and in two months, or about fifteen days more than one-half the time estimated for the whole job, it had completed the Paysandu quota and was being dismantled to go to Mercedes Pipe making began at Mercedes the first of May and in two months and a half all required for that town was cast and the plant went on making an extra supply of pipe for the Government

The rate of a pipe every thirty seconds, as mentioned by the Minister of Works, was actually attained, but the sustained rate was a pipe every forty seconds Most of the cement and sand used on the job, amounting to about 90,000 tons went through the pipe machine and the total output for the three towns was eighty miles, the sizes ranging from eight inches to twenty inches diameter, and the whole product was smooth as vitrified pipe on the inside The wisdom of having abandoned all thought of having sewer pipe shipped from the United States was apparent as soon as the plant got into operation

[1] [2] [3]

[1] Attire of Gaucho Laborer
[2] Six Footer who dug 19½ cubic yards in a day and who drove away 40 strike agitators
[3] Peon Laborer

Labor



RUGUAY is not the land of "Mañana", in other words, she is not a lazy man's land Labor is paid a peso, or a little more than a dollar for eight hours of work and every centavo of it is earned The peons are mostly Italian and Spanish mixed with Indian blood and they make excellent workmen It was wholly native workmen, bossed, very largely, by native foremen who dug the 170 miles of trench for water and sewer lines. With coal at $30 to $40 a ton, trenching machines and the steam shovels found it hard work competing with this labor and did comparatively little. Six and one half cubic yards of deep excavation in eight hours for one dollar is hard to beat. In Paysandu some of the trench work was put on the task basis with the above amount as the day's work When the men learned they could earn more than one task by working longer or harder, the system became popular Little supervision was necessary and one foreman took care of a gang of 110 men with ease.

The popularity of the company was attested by the way in which the men followed the work from one town to another In the progress report of June, 1917, it is related how the men went from Paysandu to Mercedes by boat, by cart and afoot, the road between the towns looking like a pilgrimage Some of the pipe

gang went along two weeks ahead in order to be sure of being on the ground when the work started Recording numbers, the reports show that there were 1,650 men on the job in Paysandu in April and that at Mercedes in August, before the work there reached the peak, there were already 1,400 men

Laborers Following the Work from Paysandu to Mercedes, 4 days on the Road

The progress of the job was not impeded by labor troubles Two of the most important contributing factors to uninterrupted progress were the very efficient policing of the work by the government, and the enthusiasm of the better class of workmen for the job

One instance may be cited to show how little sympathy the professional agitator receives in Uruguay In Mercedes, a local organization announced a "manifestation" There were at the time some 1400 men on the job, working hard and ignoring trouble In spite of much advance advertising, only about fifty young men and boys answered the call and formed a procession

This meagre band of agitators came to a ditch where a gang of piece-workmen was hard at work They made the great mistake of first accosting the six-foot Brazilian pictured on the opposite page, known to the job as the "Little Marion" because of his prodigious capacity with pick and shovel The Brazilian refused to notice the propagandists One of them brought in evidence a big knife Quick as a flash the Brazilian leaped from the ditch, and brandishing his pick charged the exhorters, who took to their heels without more ado.

Pay day at Salto—A Good Natured Crowd

MILITARY, POLICE, AND FIRE FIGHTING ORGANIZATIONS OF URUGUAY

[1] Marines
[2] Infantry Fully Equipped
[3] Motor Chemical Engine
[4] Motor Fire Engine
[5] Uruguayan Cavalrymen born to the saddle
[6] Traffic Policemen Montevideo
[7] Salto Policemen
[8] Mounted Policemen

Resources of Uruguay

URUGUAY has an area of 72,000 square miles About 2,000,000 acres are at present under cultivation, and some 30,000,000 acres are used for grazing cattle Most of the area is suitable for pastoral or agricultural purposes. It consists for the most part of gently rolling land, with timber in the valleys along the borders of streams, affording shade for livestock There are two low mountain ranges of about 2,000 feet elevation

Uruguayan Cattlemen

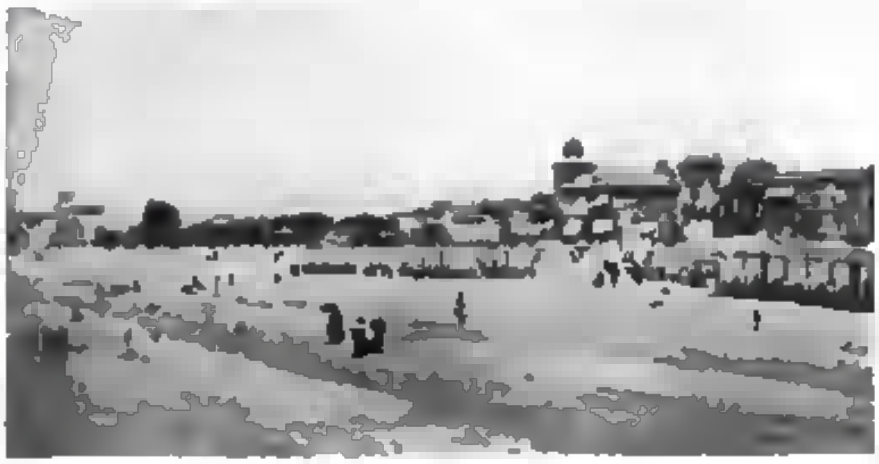
Population The population of Uruguay is about 1,200,000, an average of 18 6 to the square mile

The last state census in 1908 gave a population of 1,042 686 Of this total 181,222 were foreigners, distributed as follows 62,357 Italians, 54,885 Spanish, 27,780 Brazilian, 18,000 Argentine, the rest of various nationalities

History and Political Conditions The original colonists and many of the later immigrants came from the Basque provinces They were a sturdy, honest and hardworking people and the present generation has inherited many of their good qualities An occasional trace of the original Indian blood is seen There are very few negroes Early in its history the colony was isolated from the Spanish settlements of the Argentine and was forced to defend itself against the Portuguese and later the Spanish monarchy The Republic was recognized as an independent state in 1828 and its constitution was established in 1830.

Finances 1. *Governmental* The Republic has built up a good financial reputation, being the only South American republic that has not repudiated her debts and has kept her paper dollar at full face value for over 20 years. Her

Fresh Mounts



Pocitos Beach, Montevideo

gold reserves at the present time in the Bank of the Republic are $33,790,340 With the gold held in the legations and private banks her total is over 43 millions, greatly in excess of the backing needed for her money issues.

2 *Debts* The total public debt of Uruguay on January 1, 1919, was $147,559,580, or $130 per capita.

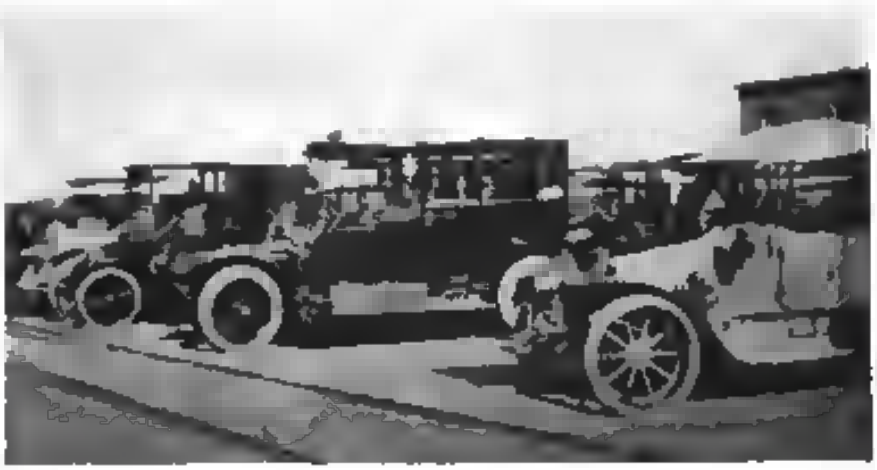
Internal loans	$24,340,302
External loans	121,077,787
International loans	2,135,500

Bonds aggregating $15,500,000 were owned by the Government, $132,000,000 were in the hands of the public, 35% of the external loans were owned by residents of Uruguay At the beginning of the war European bankers were forced to withdraw from a promised loan

The debt is secured in large part by the customs receipts which in 1914-15 were $11,468,793 The revenue and expenditure for the current year are about balanced in budget estimates at $20,500,000, but owing to the falling off of customs

Plaza Independencia, Montevideo

Automobiles Parked at Montevideo



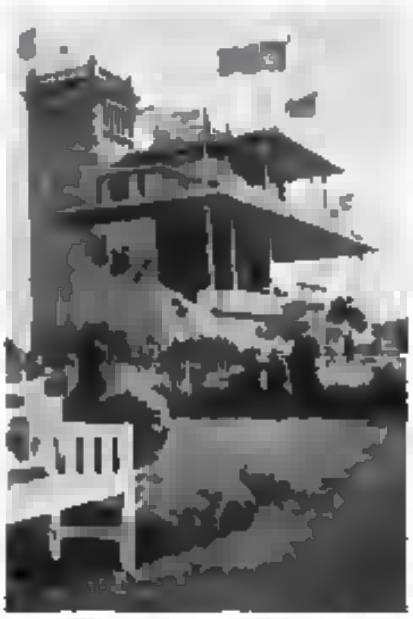
dues there will probably be a deficit of over $2,000,000, bringing the accumulated deficit up to about 5½ millions.

3 *Banks* The Bank of the Republic was organized in 1896 with a capital of $5,000,000, which has been increased to about $14,000,000 This is the only bank of issue and its gold reserves are now about double the required amount. In 1912 the Government established a National Insurance Bank and forbade the formation of any more new insurance companies in the Republic In 1914 this bank wrote 34 7% of all fire insurance of the Republic.

4 *Monetary Statistics.* The monetary standard is the gold peso, worth $1 03. No gold coins have been issued however Silver coins are the peso or dollar, weighing 25 grams, and half, fifth and tenth peso pieces.

5 *Private Wealth* The total wealth of Uruguay is estimated at $2,000,000,000 or $1,200 per capita. $1,410,000,000 is invested in cattle raising or agriculture England is the largest foreign investor with a total capital of between $150,000,000 to $200,000,000

Wharves of Montevideo



Guests' Pavilion at the Races, Montevideo, July, 1917

INDUSTRY 1 *Agricultural* The main industry of Uruguay has always been cattle raising and the marketing of cattle products Almost 90% of the total annual volume of her business is connected in some way with cattle Ninety-eight per cent of her total exports are animal products but only 4% livestock

In 1915 the proportion of these products was as follows

Wool	$20,080,000
Hides	16,663,000
Meats and Extracts	30,334,000
Livestock	1,089,000
Animal fat	1,540,000
Cereals	696,000

The raising of cereals is now growing in importance The area planted to wheat increased from 288 468 hectares in 1905 to 315,000 in 1915 and with the increasing wheat shortage will probably grow rapidly "El Resumen" for August 11 estimates the surplus of wheat for export this year at 200,000 tons, the excess of area sown to wheat over last year is given at 30% by the "Razon" of August 11 Alfalfa is also a coming crop, grown for its effect on impoverished pasture lands as well as its intrinsic value as fodder

The wine industry is also growing In 1915, 15 627 acres were planted to grapes and 2,531,546 gallons of wine were produced

Linseed and tobacco are also profitable crops

2 *Manufacturing* The only manufacturers in Uruguay of importance are those connected with the animal industry These include large meat packing plants near Montevideo, in which a large amount of North American capital has been invested, and the Liebigs Beef Extract plant at Fray Bentos There are

Welcoming the United States Fleet, Montevideo, July, 1917

numerous small manufacturing plants, among these being a modern cement factory and several hat factories A large output of hides and of wool, the comparative value of which is shown above, is exported The net increase over normal in the prices of hides in 1916 was 300%—$11,000 000, the country also enjoyed a large advance in the prices received for wool and other products

'Alice M Colburn" Ship of the Ulen Company dressed in Welcome to the United States Fleet July, 1917

3 *Mineral* There has been very little development of the mineral resources of Uruguay. Some gold mines are worked in the northern part and Uruguayan amethysts, topazes and waterstones are well known One cement manufacturing plant has developed quarries, from which its cement material is obtained, and some very good marble and building stone deposits are known to exist but have not been exploited to a great extent. There are large deposits of gravel and sand suitable for construction purposes in the western part of Uruguay, from which the local demand is supplied Owing to the scarcity of this kind of construction material in the vicinity of Buenos Aires, practically all that is used in the construction work there comes from Uruguay

Representatives of the Ulen Company joining in the Welcome to the United States Fleet, July, 1917

4 *Streams* Uruguay is plentifully supplied with streams These with frequent rainfalls make the country less subject to the dangers of severe drought than other parts of South America Uruguay being dependent upon imported fuel, considerable attention has been devoted to the possibility of developing water power This has met with little success owing to the lack of suitable falls in the streams

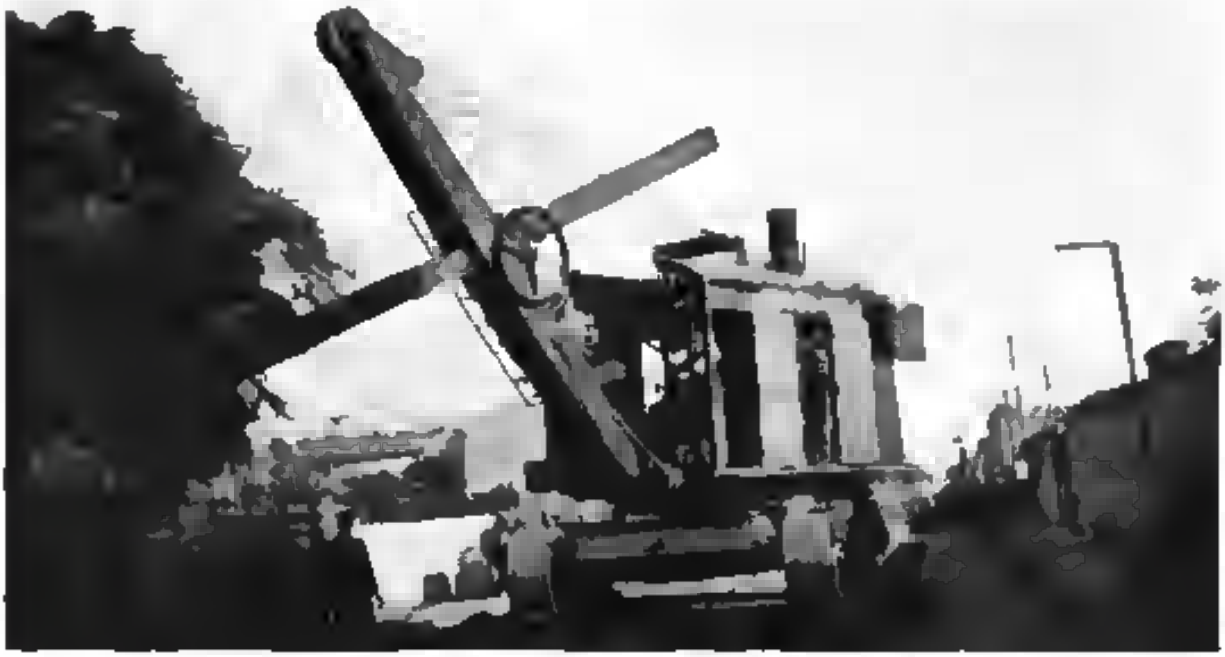
TRADE The export trade of Uruguay is dependant upon her pastoral and agricultural industries. The total export trade increased from 42½ millions of dollars in 1910-11 to 73 millions in 1914-15 The proportion of animal products in 1915 was 75%, and in 1910-11 approximately 60% The only other important export products are wheat and linseed

There being few local industries, the articles that make up the import trade embrace everything required by a developing and progressive pastoral and agricultural country

Unloading Sand and Gravel from River Barges

Great Britain and France have led in the furnishing of imported articles to Uruguay The United States is third with imports of $5,171,323 and exports of about $1,049,649 The trade with the United States, both import and export, has greatly increased as compared with that with other countries during recent years The imports were about normal for the preceding five years, but the exports were more than double the average.

RAILROADS Uruguay's total mileage for the nine railway companies open for traffic at the end of 1916 was 1,630 miles. One thousand and sixty were under State guarantee of earnings of 3½%, or $16,000 per km of main line and $14,000 per km of branch line



Steam Shovel in Operation

The total capitalization of the roads on December 20, 1616, was $85,000,000, $28,000,000 being common stock. In 1913 14, 2 97% was earned on this capital which with the State guarantee meant a total yield on the capital of about 3 6%. The railroad companies are all English The government of Uruguay has always fulfilled its obligations to the foreign railway companies

1 *Central Uruguay* The Central Uruguay lines connect Montevideo with Mercedes, Melo, Treinta y Tres and Minas, passing through a developing agricultural country There is a through train service from Montevideo to Rivera on the Brazilian Border, connecting with the Brazilian railway system at Santa Ana across the border, it being possible to journey by rail all the way from Montevideo, Uruguay to Rio de Janeiro, Brazil The Central Uruguay lines constitute 63% of the total mileage of the country and carry 90% of the passengers and 80% of the tonnage

2. *Midland Uruguay R R.*—This road has 229 miles of track from Rio Negro to Salto with two branches and a capital of $14,335,000 It serves a wholly pastoral country, carrying cattle and wool There is an extension to Fray Bentos, which is becoming one of the important ports on the Uruguay River, being the site of the Liebig Beef Extract plant.

3 *Northwestern of Uruguay* This road has 112 miles of track, running north from Salto through Santa Ana and Isla Cabellos to the Cuarem River across which an international bridge is to be built The chief importance of this road is to serve as an outlet for southwest Brazil The portion of Uruguay which it crosses is not rich as that south of Salto and will not develop as far

4 *Uruguay Northern Ry.* This road has 72 miles of track running from Isla Cabellos northeast to San Eugenio on the Cuarem through a sheep raising district. Its best chance of future development is as another outlet for southern Brazil

School Boys at Salto Watching the Steam Shovel

5 *Uruguay East Coast Railway Co* This road has 70 miles of track, beginning at Olmos Junction on the Central Uruguay Northeastern and running along the southeast coast to Maldanado, through a cereal country, serving 27 6% of the total cereal acreage of the republic

Shipping In 1916 a total of 41 steamers with a registry of 35,890 tons were flying the Uruguayan flag, in addition to these there are a number of sailing craft registered under Uruguayan laws Up to recently the Uruguayan navigation laws had offered special attractions to vessel owners The Mihanovitch Company operates one of the important steamship lines, both passenger and freight service, between Montevideo and Buenos Aires and ports up to the Parana and Uruguay Rivers. Some of these steamers are modern in every respect. It is understood that this line has recently been acquired by the Royal Mail Steamship Company

Communication In addition to the facilities for communication by means of rail and water mentioned above, there is telegraph and wireless communication and a modern postal service with offices established throughout the republic A modern telegraph system connects by means of cable as well as land lines with other South American countries, and the City of Montevideo has local and long distance telephone systems, including telephone connections with the City of Buenos Aires

Cities The Republic of Uruguay is divided into nineteen provinces, each with its capital city Montevideo, with a population of 400,000, is the capital of the Republic, and the commercial and financial centre The other cities of most importance are river ports where produce from the surrounding country is embarked These in order of importance are Paysandu, Salto, Colonia, Fray Bentos on the Uruguay River and Mercedes a short distance up the Rio Negro There are a number of interior municipalities with from five to ten thousand inhabitants They have few manufacturing industries and are merely centres

Mercedes Reservoir under Construction

of agricultural and cattle raising districts and made up principally of prosperous-looking residences of persons engaged in those industries, with a few retail stores, banks, warehouses, etc. necessary to serve the local requirements.

1. *Montevideo.* Most of the imports and exports of the Republic of Uruguay pass through the custom house at Montevideo. The customs statistics for 1909 indicate that 92% of the imports of the country and 71% of the exports passed through this port. There are a number of old Spanish buildings in Montevideo, many of its streets are narrow, but there are also many recently constructed buildings which, although modern, are patterned after the Spanish style of architecture to harmonize with surroundings. There are many wide streets and avenues. Most of the streets are well-paved and lighted. The entire city is served with modern electric street railways. The light for the city is furnished by a modern well-managed electric light and power plant, operated by the government, which also controls the light and power plants in the cities throughout the Republic. Montevideo has a sewer and water works system.

Municipal Bonds. An issue of $6,883,975 6% bonds were authorized in 1888, of which $4,908,590 were still outstanding January 1, 1917. Interest in 1891 was paid in a further issue of bonds at par. From 1892 to 1894 interest was paid at 4%. From 1900 interest has been paid at 5% with ½% sinking fund. These bonds were for public works. They were guaranteed by the State.

2. *Paysandu.* The second city of Uruguay is important for its meat plants, the jerked beef establishments which are waning, and the freezing plants which are increasing. Its population numbers about 22,000.

3. *Fray Bentos.* This city is the home of Liebig's Extracts of meat. In population it is still far behind Paysandu but with the development of its port facilities it bids fair to have a rapid development.

4. *Salto.* Salto has been looked upon as a possible future manufacturing centre in the event of the successful development of water power at the Salto Falls nearby in the Uruguay River. These Falls being so low, however, sometimes entirely disappearing during the hot weather, their utilization presents some engineering problems which it may be difficult to overcome.

5. *Mercedes.* This is a port on the Rio Negro. It has an important meat trade and ships about 200 tons of charcoal a month.

6. *Colonia.* This is the most historic town in Uruguay and is now declining though its port still does a good business. It is the nearest port to Buenos Aires. The Province of Colonia is a promising dairy country in which the Swiss colony is building up a thriving dairy business.

OPPORTUNITIES

A great deal of attention has been devoted by the people to the improvement of the breed of livestock, by the importation of blooded animals from England and the United States. The Uruguayan Government has also given considerable assistance and encouragement along this line. There are possibilities of development in the raising of pigs and poultry and in the production of dairy products. No doubt the manufacture of leather goods

and other industries depending upon the cattle industry for raw materials will show signs of development in time.

As in many other progressive countries there has been considerable talk during recent years regarding state ownership of public utilities. The Uruguayan Government has successfully operated for some time light and power plants in Montevideo and other cities, and a small part of the steam railway lines. These undertakings have of course stimulated the usual propaganda for public nwnership. That the situation presents no more difficulties than are found in other countries for the investment of private capital is indicated by recent heavy investments by North American interests in packing houses and in the purchase of government bonds for the construction of a sewer and water works in the cities of Salto, Paysandu and Mercedes. There are a number of other possibilities for the construction of public works, in the nature of sanitary systems for other interior cities, the extension of the water works system in Montevideo and the harbor works at various ports.

In Uruguay we find a country with good lands, a favorable climate and industrious people, and a long-established cattle raising industry, together with a government that has the reputation of having always met its foreign obligations; all of these elements being favorable to profitable investment of private capital and further development of the country not only along the established lines but also in new directions.

Mr. Henry C. Ulen, on Business Bent